

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petition of)
)
ENVIRONMENTAL HEALTH COALITION)
AND EUGENE J. SPROFERA)
)
For Review of Cleanup and Abatement)
Order No. 85-91, Addendum No. 7, of)
the California Regional Water Quality)
Control Board, San Diego Region.)
Our File Nos. A-775 and A-775(a).)
_____)

ORDER NO. WQ 92-09

BY THE BOARD:

On December 9, 1991, the California Regional Water Quality Control Board, San Diego Region (Regional Water Board) adopted Addendum No. 7 to Cleanup and Abatement Order No. 85-91. Cleanup and Abatement Order No. 85-91 required Paco Terminals, Inc., the discharger, to cleanup and abate discharges of copper ore to the San Diego Bay. Addendum No. 7 amended Cleanup and Abatement Order No. 85-91 by relaxing the cleanup level of copper contaminated sediment in the San Diego Bay from 1,000 milligrams per kilogram (mg/kg) to 4,000 mg/kg. On January 8, 1992, the Environmental Health Coalition and Eugene Sprofera ("Petitioners") filed timely but incomplete petitions for review of Addendum No. 7. The Petitioners later supplemented the petitions and the petitions were deemed complete on April 24, 1992. The Petitioners' primary contention is that the 4,000 mg/kg sediment cleanup level does not comply with the State Water Resources Control Board's (State Water Board's) Water

Quality Control Plan for the Enclosed Bays and Estuaries of California ("EBE Plan") and other Board requirements.¹

I. BACKGROUND

In the late 1970s, Paco Terminals, Inc. (Paco Terminals) began conducting copper ore storing and loading activities at the National City Marine Terminal (NCMT) in San Diego, which it leased from the San Diego Unified Port District ("Port District"). The Regional Water Board issued permits to Paco Terminals (Waste Discharge Requirements Order Nos. 79-72 and 84-50, NPDES Permit No. CA0107930). The permits regulated the storage and loading of copper ore, prohibited the discharge of copper to the San Diego Bay, and required Paco Terminals to follow a best management practices plan to prevent discharges. In 1985, Regional Water Board staff inspected Paco Terminals' facility and discovered copper discharges to the Bay in violation of the permits. The Regional Water Board issued Cleanup and Abatement Order No. 85-91, naming Paco Terminals as the responsible party for the discharges. Order No. 85-91 was revised in 1989 to include the Port District as a responsible party. Both parties are hereinafter referred to as the "Dischargers."²

Cleanup and Abatement Order No. 85-91 required Paco Terminals to remove copper contaminated sediment to attain the

¹ The petitioners have filed two separate petitions that raise some similar issues. Where appropriate, issues specific to one of the petitions will be identified.

² In 1989, the Regional Water Board adopted Addendum No. 3 to Order No. 85-91 adding the San Diego Unified Port District as a responsible party. The State Water Board affirmed Addendum No. 3 in Order No. WQ 89-12.

background level of 110 mg/kg of copper in sediment in San Diego Bay and to attain a level of 5 micrograms per liter (ug/l) (6-month median) copper in the water column.³ In response to Order No. 85-91, Paco Terminals provided a report on the distribution of copper contaminated sediments, evaluated the effects of copper on the marine environment, and evaluated the cost and feasibility of cleanup alternatives. The report indicated that copper concentrations in the sediment near the NCMT pier face ranged from 2,300 mg/kg to 28,600 mg/kg. Copper concentrations in the water column ranged from 10 ug/l to 21 ug/l and copper concentrations in the interstitial water (the water between the particles that make up the bay bottom sediments) ranged from 80 ug/l to 480 ug/l (average 214 ug/l).

Addendum No. 1 to Order No. 85-91, issued November 13, 1987, revised the Order. It required the Dischargers to reduce the sediment copper concentration in the affected portion of the San Diego Bay to a sediment copper concentration less than 1,000 mg/kg (dry weight). (Throughout this Order, the mg/kg levels are for dry weight copper.) The Regional Water Board based the cleanup level on several factors. The Board concluded that the benthic community in the area of NCMT was "impoverished"

³ The requirements in Order No. 85-91 were based on the Water Quality Control Plan, Ocean Waters of California because the May 1974 Enclosed Bays and Estuaries Policy (EBE Policy) does not contain numerical water quality objectives. The Order required the Dischargers to remove copper contaminated sediment to levels that would attain the following levels in the water column: 5 ug/l (6-month median), 20 ug/l (daily maximum), and 50 ug/l (instantaneous maximum). The Enclosed and Estuaries Plan (EBE Plan), adopted in April 1991, includes the water quality objective for copper of 2.9 ug/l (1-hour average). Addendum No. 5 of Order No. 85-91 required the Dischargers to comply with the EBE Plan upon its adoption.

prior to the commencement of Paco Terminals' operations. It was therefore not possible to determine conclusively the impact of Paco Terminals' operations on the aquatic environment. The Board found, however, that data from the State Mussel Watch Program indicated that copper ore contaminated sediment significantly contributes to very elevated copper concentrations found in mussels in the area of Paco Terminals compared to mussels in other areas. Based on this data, the Board found that a significant amount of copper ore is migrating from the sediment into the water column. The Regional Water Board found that the copper contaminated sediment caused the exceedance in the water column of 5 ug/l, the level established in Order No. 85-91. The Board concluded that a sediment copper concentration of less than 1,000 mg/kg would attain 5 ug/l of copper in the water column and would protect the beneficial uses in the San Diego Bay.

Addenda Nos. 5 and 6 to Order No. 85-91 revised the schedules for compliance with the Order. In addition, they allowed the Dischargers to propose an alternate cleanup strategy, i.e., a less stringent sediment copper cleanup level, if they could demonstrate that a less stringent cleanup level would protect beneficial uses, comply with State Water Board Resolution 68-16 ("Statement of Policy With Respect to Maintaining High Quality of Waters in California"), EPA's Antidegradation Policy (40 C.F.R. 131.12), and with the State Water Board's most recent "Water Quality Control Plan for Enclosed Bays and Estuaries of California" (EBE Plan). The addenda also required the Dischargers to submit a report concerning the alternative of

transporting copper contaminated sediment to a copper production facility for copper extraction (the "mining company option").⁴

Based on their consultants' study of alternative cleanup strategies, the Dischargers requested that the Regional Board revise the cleanup level from 1,000 mg/kg to 4,000 mg/kg. The Dischargers' report analyzed remediation alternatives. The report designated two categories of sediments. Sediments near the NCMT contain copper in concentrations as high as 58,269 mg/kg. Level I consists of sediments containing greater than 1,000 mg/kg but less than 2,000 mg/kg copper (13,200 cubic yards). Level II consists of sediments containing greater than 2,000 mg/kg copper (9,800 cubic yards). The mining company option was identified in the report as the best alternative for disposal of the Level II materials. Options for the Level I material included ocean disposal, bulkhead disposal, and landfill disposal.⁵ The Dischargers' report also concluded that the copper ore did not have an impact on beneficial uses in the San Diego Bay primarily because of the nature of copper ore. Unlike

⁴ *The mining company option is the result of negotiations between parties in state and federal lawsuits concerning the cleanup. Parties to the negotiations include Paco Terminals, the Port District, several mining companies that supplied the copper ore to Paco Terminals, manufacturers of equipment that malfunctioned during copper loading operations, and numerous insurance companies. The mining company option was suggested when the U.S. Environmental Protection Agency indicated that it would not permit ocean disposal of the copper contaminated sediment.*

⁵ *The report indicated that the cost of the mining option for Level II materials (greater than 2,000 mg/kg) is \$3,790,000 and the cost for bulkhead disposal of Level II materials (1,000 to 2,000 mg/kg) is \$1,250,000. Approximately \$500,000 additional costs was common to all remedial options. Land remediation has already cost the Dischargers \$1,300,000. The bulkhead option would require extending the wharf by building a new bulkhead and using the sediment as backfill to support the bulkhead. The ocean disposal option was rejected by the U.S. Environmental Protection Agency.*

other types of copper discharged to the San Diego Bay (antifouling paints, etc.), the copper ore discharged from Paco Terminals is not expected to be toxic to aquatic organisms because in the oxygen free sediments it is expected to be stable, highly insoluble, and thus largely unavailable to affect aquatic life. Further, the copper ore tends to sink into the sediment so it is unavailable to most organisms. The Dischargers asserted in their response to these petitions that the EBE Plan does not apply to sediment cleanups in the Bay, but if it did the cleanup level of 4,000 mg/kg would not contribute to a violation of the 2.9 ug/l standard in the Plan.

After a hearing, the Regional Water Board adopted Addendum No. 7 to Order No. 85-91 revising the cleanup level as proposed by the Discharger. The Board made findings, based on the additional technical information provided by the Dischargers, that 4,000 mg/kg copper is an appropriate sediment cleanup level. They found that the 4,000 mg/kg level would protect the beneficial uses of the Bay. Addendum No. 7 is the subject of the petitions.

Due to high levels of four pollutants, including copper, San Diego Bay is listed in the State Water Board's 1990 Water Quality Assessment as having impaired water quality and has been placed on several Clean Water Act-mandated lists of impaired water bodies. The beneficial uses that are considered impaired include shellfish harvesting and marine habitat. As this Board noted in State Water Board Order No. WQ 91-10, a "major source of copper pollution comes from copper ore deposits in the vicinity

of Paco Terminal".⁶ According to Regional Board staff estimates, if Paco Terminals were to comply with the 1,000 mg/kg cleanup level, four to five percent of the material it discharged to the Bay would be removed.

Cleanup and Abatement Order No. 85-91 has been the subject of several Addenda which amend the compliance schedule. Addendum No. 7 requires sediment removal to be completed by April 1, 1993.

II. CONTENTIONS AND FINDINGS⁷

1. Contention: The Petitioners contend that the revised cleanup level of 4,000 mg/kg will violate the EBE Plan, State Water Board Resolution 68-16, and other applicable requirements of the State and Regional Water Boards and request that the State Water Board reinstate the 1,000 mg/kg cleanup level.

Finding: The revised cleanup level of 4,000 mg/kg does not comply with the requirements applicable to cleanup and abatement orders under Water Code Section 13304 and it is likely to violate the EBE Plan, Resolution No. 68-16, and other

⁶ State Water Board Order No. WQ 91-10 concerned the regulation of discharges into the San Diego Bay from ground water dewatering activities in San Diego. The Order required that permits for these discharges be amended to add the water quality objectives in the EBE Plan for copper, mercury, and PCBs. A lawsuit was filed challenging Order No. WQ 91-10 and actions of the Regional Water Board in failing to establish total maximum daily loads, wasteload allocations, and load allocations for the San Diego Bay. Environmental Health Coalition v. State Water Resources Control Board, San Diego County Superior Court, Case No. 644648 (filed November 6, 1991).

⁷ Other contentions raised by petitioners are denied for failure to raise substantial issues. 23 CCR Section 2052(a)(i); People v. Barry, 194 Cal.App.3d 158, 339 Cal.Rptr. 349 (1987).

requirements. The appropriate cleanup level is 1,000 mg/kg.

Order No. 85-91 was issued under Water Code Section 13304. Section 13304 requires that any person who has discharged or discharges waste into waters of the state in violation of any waste discharge requirement or other order or prohibition issued by a Regional Water Board or the State Water Board is required to cleanup and abate the effects thereof. This Board recently adopted State Water Board Resolution No. 92-49 which describes the policies and procedures that apply to the investigation and cleanup and abatement of discharges under Water Code Section 13304. As stated in Resolution 92-49, "dischargers are required to cleanup and abate the effects of discharges in a manner that promotes attainment of background water quality, or the highest water quality which is reasonable if background levels of water quality cannot be restored..."⁸ In setting the cleanup level, Water Code Section 13000 states that consideration should be given to "all demands being made and to be made on the waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible". Alternative cleanup levels less stringent than background must comply with State Water Board Resolution 68-18; not unreasonably affect present and anticipated beneficial use of such water; and not result in water quality less than that prescribed in the Water

⁸ State Water Resources Control Board Resolution No. 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304) was adopted in 1992 after issuance of Order No. 85-91, including the Addenda. However, the policies relevant to this order and described in Resolution 92-49 existed prior to the Resolution. The Regional Water Board applied these policies in adopting Order No. 85-91.

Quality Control Plans and Policies adopted by the State and Regional Water Boards. Order No. 85-91 requires compliance with these requirements.

Water Quality Control Plans and Policies that apply to the situation at the NCMT include the EBE Plan⁹ and State Water Board Resolution No. 68-16. The EBE Plan establishes narrative and numerical water quality objectives to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The Plan states that discharges of waste shall not cause a violation of these objectives. The Plan contains the numerical water quality objective for copper in the water column of 2.9 ug/l (1-hour average). The Plan contains several narrative water quality objectives including the following: (1) "The concentrations of toxic pollutants in the water column, sediments, or biota shall not adversely affect beneficial uses." (2) "Enclosed bays and estuarine communities and populations, including vertebrate, invertebrate, and plant species, shall not be degraded as the result of the discharge of waste." The Plan does not establish numerical objectives for sediment. However, to comply with the Plan the sediment must not contain levels of copper that would cause the exceedance of the numerical objective in the water column or a violation of the narrative objectives.

State Water Board Resolution 68-16 states that existing water quality shall be maintained unless a change will be "consistent with the maximum benefit to the people, will not

⁹ *The San Diego Bay is an enclosed bay within the meaning of the Enclosed Bays and Estuaries Plan.*

unreasonably affect present and anticipated beneficial uses of such water and will not result in water quality less than that prescribed in the policies". Discharges are required to meet requirements that will result in the "best practicable treatment or control...".

It is undisputed that the Dischargers violated the Waste Discharge Requirements and are therefore subject to Water Code Section 13304. Reports prepared by the Dischargers indicate that attainment of a cleanup level of 110 mg/kg (background) is not feasible because it would require removal of approximately 575,000 cubic yards of sediment. Removal of that much sediment would be extremely expensive and might have adverse impacts on the marine environment. Thus, an alternative cleanup level is appropriate.

This Board concludes that a cleanup level of 1,000 mg/kg would comply with the requirements described above. With regards to compliance with the EBE Plan, the record indicates that 1,000 mg/kg is the cleanup level that is most likely to attain the numerical standard in the EBE Plan of 2.9 ug/l (1-hour average). The record is not conclusive in determining what levels would comply with the narrative standards to protect beneficial uses contained in the EBE Plan. Information provided by the Petitioners indicates that several species of marine organisms suffer toxic effects where sediment levels are at or below 390 mg/kg. Further, the Regional Water Board concluded in Order No. 85-91 and Addendum No. 1 that data from the State Mussel Watch Program demonstrate that the copper

contaminated sediment has affected the marine environment and that the contaminated sediment is continuing to discharge copper to the water column. The Dischargers assert that information from studies performed by their consultants demonstrate that the copper they discharged to the Bay is not toxic to aquatic life because it is stable, highly insoluble, and thus largely unavailable to affect aquatic life. They assert that even at levels as high as 19,800 mg/kg no impacts to aquatic life would occur. The conclusions reached by the Dischargers are not supported by their studies. The Dischargers' study contains no tests that would isolate copper as a contributing factor to the adverse effects investigated and does not evaluate the effects of copper at proposed cleanup levels. In general, the studies presented were designed to address whether the remediation site is adversely affected, but were not designed to discriminate among various concentrations of copper.¹⁰ Thus, it cannot be concluded that a level of 4,000 mg/kg will comply with the EBE Plan requirements.

Since the 1,000 mg/kg cleanup level is likely to comply with the 2.9 mg/l objective in the EBE Plan, that level would also comply with Resolution 68-16, which requires compliance with

¹⁰ See State Water Board Division of Water Quality Staff Report (Comments on the Woodward-Clyde Report on Copper Pollution at the National City Marine Terminal, San Diego Bay) (August 18, 1992). Generally, the Woodward-Clyde Report provides some support for a cleanup level of 1,000 mg/kg copper, some indication that 2,000 mg/kg copper should be considered, and no support for the proposed 4,000 mg/kg cleanup level. The Report contains no analysis concerning the 2.9 ug/l water quality objective, but does indicate that the water quality objective is regularly exceeded both in nearby locations and at the site.

State and Regional Water Board plans and policies.¹¹ Other factors to be considered in determining the maximum benefit to the people, as required by Resolution 68-16, include the impacts of leaving contaminated sediment in the Bay. As noted above, the San Diego Bay is listed in the State Water Board's 1990 Water Quality Assessment as having impaired water quality due, in part, to high levels of copper. As this Board noted in Order No. WQ 91-10, a "major source of copper pollution comes from copper ore deposits in the vicinity of Paco Terminals." Due to high levels of copper in Bay Waters, the Bay has no assimilative capacity for copper. The Regional Water Board found in Order No. 85-91 that the failure to remove copper contaminated sediment to the 1,000 mg/kg level would impair the ability of the San Diego Bay to support the designated beneficial uses as other sources of pollution are eliminated. The record indicates that dredging is likely to occur in the vicinity of the NCMT in the future. Disposal of such contaminated dredged material is likely to be difficult since EPA has so far prohibited ocean disposal of such sediment from the NCMT. Leaving contaminated sediment in the Bay would unfairly shift the burden to others to dispose of the sediment.

The cleanup level of 4,000 mg/kg adopted by the Regional Water Board as proposed by the Dischargers does not

¹¹ Resolution 68-16 also requires the use of the "best practicable treatment or control of the discharge". There appears to be no dispute concerning the proposed method of removing the sediment or the capability of the proposed method to remove to the 1,000 mg/kg level. The State Water Board has interpreted Resolution 68-16 to incorporate the federal antidegradation policy, 40 C.F.R. §131.12(a).

comply with the applicable requirements. The Dischargers proposed the 4,000 mg/kg level based on several factors. As the Dischargers stated in the December 9, 1991, Regional Water Board meeting where the level was adopted, it was proposed because it is the level determined to be a hazardous waste for purposes of disposal in a Class I landfill under Title 22 California Code of Regulations. It is undisputed that the number is irrelevant for purposes of cleanup standards in the marine environment. As noted above, the Dischargers have not provided adequate information to establish that the 4,000 mg/kg level will protect beneficial uses. Other information in the record indicates that a level of 1,000 mg/kg will comply with the EBE Plan's numerical standard of 2.9 ug/l.

The Dischargers also assert that by adopting 4,000 mg/kg as the cleanup level they will save approximately \$3.6 million in cleanup costs and that such economic concerns are appropriate to consider in setting cleanup standards. Economic considerations, while relevant to setting cleanup levels, are not the only factors. This Board stated in adopting Resolution No. 92-49 that economics is one factor to be considered in determining cleanup levels.¹² In this regard it should be noted that a 1,000 mg/kg level is well above the 110 mg/kg background level and would result in cleanup of only four to five percent of

¹² Water Code Section 13241, relied on by the Dischargers, allows economics to be considered in setting water quality objectives in water quality control plans. That section, however, does not apply to cleanup levels established under Section 13304. State Water Board Resolution No. 92-49 states that the financial and technical resources available to the discharger should be considered in determining schedules for the cleanup.

the contaminated sediment. To allow a further relaxation would violate applicable water quality control plans and policies of the State and Regional Water Boards. The Dischargers also state that agreements reached in negotiations between the parties to their lawsuits are contingent upon the 4,000 mg/kg level. Developing a cleanup level based on private negotiations between parties who will benefit by a less stringent cleanup level does not necessarily result in compliance with the applicable water quality requirements.¹³

Cleanup efforts should be initiated as soon as possible consistent with Order No. 85-91. Nothing in this order precludes the dischargers from asking us for a modification of the cleanup standards provided that cleanup is proceeding and provided that any modification is based on additional testing and studies acceptable to State Water Board staff.

2. Contention: Petitioner Mr. Eugene Sprofera contends that the Regional Water Board improperly excluded him from presenting testimony at the hearing held to consider Addendum No. 7.

Finding: The Regional Water Board's action in refusing to allow Mr. Sprofera to present testimony at the public hearing

¹³ Obviously, a less stringent cleanup level will cost less to attain. The Dischargers stated in the record that the mining company option is feasible and the best alternative for sediments with copper concentrations greater than 2,000 mg/kg. They also suggested at least two feasible options for disposal of sediments with copper concentrations between 1,000 and 2,000 mg/kg. The current cost estimate for cleanup of sediments greater than 1,000 mg/kg (\$7.5 million) is within the range contemplated by the Regional Water Board when the cleanup level was initially established at 1,000 mg/kg (\$475,000 to \$17 million). The Port District has stated that the estimated value of the copper ore concentrate handled by Paco Terminals was approximately \$1.5 billion.

violated the applicable regulations (23 California Code of Regulations Section 647, et seq.). The Regional Water Board staff's response to Mr. Sprofera's petition states that the Regional Water Board has since been advised about their misunderstanding of the rules. This error, however, was harmless in this situation since Mr. Sprofera provided his comments in his petition to this Board.

III. SUMMARY AND CONCLUSIONS

1. The cleanup level adopted in Addendum No. 7 to Cleanup and Abatement Order No. 85-91 does not comply with Section 13304 of the Water Code, the EBE Plan, and State Water Board Resolution 68-16.

2. The cleanup level that will likely comply with the applicable requirements is 1,000 mg/kg (dry weight) copper in the sediment.

III. ORDER

IT IS HEREBY ORDERED that:

1. Order No. 2 of Addendum No. 7 to Cleanup and Abatement Order No. 85-91 is revised to read:

"Paco Terminals and Port District shall reduce the sediment copper concentration in the affected portion of San Diego Bay to a sediment copper concentration less than 1,000 mg/kg (dry weight)."

IT IS FURTHER ORDERED that in all other respects, the petition is denied.

IT IS FURTHER ORDERED that the discharger may ask the State Water Board for a modification of the cleanup order provided that cleanup is proceeding consistent with Order

No. 85-91 and provided that any request for modification is based on additional tests and studies acceptable to State Water Board staff.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 17, 1992.

AYE: Eliseo M. Samaniego
John Caffrey
Marc Del Piero
James M. Stubchaer

NO: None

ABSENT: None

ABSTAIN: W. Don Maughan



Maureen Marché
Administrative Assistant to the Board